

REMARKS

Claims 1-24 are pending in the application.

Claims 1-3, 6-15, 17-19 and 21-24 are rejected.

Claims 4, 5, 16 and 20 are objected to.

Claims 11-13 have been amended

Claim Objections

Claims 4, 5, 16 and 20 are objected to as being dependent upon a rejected base claim, but would allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant respectfully asserts that these claims are patentable by virtue of being dependent upon allowable base claims, as explained in further detail below. If necessary, however, Applicant will rewrite these claims in independent form at a later date.

Rejection of Claims under 35 U.S.C. §101

Claims 1, 11, 21 and 24 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. In particular, the Examiner states that the claims “are not statutory because they merely recite a number of computing steps without producing any tangible result and/or being limited to a practical application within the technological arts.” Office Action, p. 2. Applicant respectfully disagrees with this assertion.

With respect to claim 1, the claim clearly recites the act of replicating a change to a data volume. Accordingly, claim 1 describes the act of updating information within a data volume by applying a change to that data volume. This both produces a tangible result (the updated information within data volume) and is a practical application within the technological arts. Accordingly, Applicant asserts that claim 1 is directed to statutory subject matter.

With respect to amended claim 11, the claim explicitly recites a computer readable medium that stores program instructions for performing functions such as the replication of changes to a secondary data volume. The MPEP clearly states that “when functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally

interrelated to the medium and will be statutory in most cases.” MPEP §2106(IV)(B)(1). Accordingly, claim 11 recites statutory subject matter.

Claims 21 and 24 are directed to a system, which by its very nature is a tangible entity. Moreover, these claims clearly recite two data volumes as well as structural elements (e.g., the means for replicating in claim 21 and the computing nodes in claim 24) for performing certain functions that modify information stored by the data volumes. Accordingly, the claims recite tangible elements as well as structural elements that operate to produce tangible results by modifying information stored by the data volumes. For at least these reasons, claims 21 and 24 recite statutory subject matter.

Rejection of Claims under 35 U.S.C. §102

Claims 1-3, 6-15, 17-19 and 21-24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Mandal, et al., U.S. Patent No. 6,772,178 B2 (hereinafter referred to as “Mandal”). Applicant respectfully traverses this rejection.

With respect to claim 1, the cited art fails to anticipate, teach or suggest:
replicating a first change made to a primary volume, wherein
 the first change is replicated to a secondary volume; and
replicating a second change made to the primary volume, wherein
 the second change is replicated to the secondary volume,
 the second change is caused by a restore operation, and
 the replicating the second change comprises recording an order of the second
 change relative to the first change. (emphasis added)

The Office Action cites several portions of Mandal as teaching the claim element “the second change is caused by a restore operation.” Office Action, p. 4. The first cited portion of Mandal, col. 4, lines 60-67, describes how a manager starts data replication software in two host systems A and B in order to replicate data from a primary volume to a secondary volume. Afterwards, replication is automatic. If a failure occurs and disrupts replication, the data replication software needs to be manually configured to perform volume synchronization. This section of Mandal clearly neither mentions nor suggests a change that is caused by a restore operation.

The next cited section of Mandal, col. 5, lines 25-67, describes how a data replication system is implemented using a three tiers, the middle of which can be implemented using Federated Java (TM) beans. Col. 8, lines 66-67 and col. 9, lines 1-4 of Mandal describe how a secondary volume can be exported to the primary host, such that the primary host will have a valid pathname to a volume that coincides with the secondary volume. These sections also clearly neither teach nor suggest a change that is caused by a restore operation.

Thus, for at least the foregoing reasons, the cited portions of Mandal fail to teach or suggest a “second change [that] is caused by a restore operation,” as recited in claim 1, and thus the cited art fails to anticipate this feature of claim 1. Accordingly, claim 1 is patentable over the cited art.

Further with respect to claim 1, the cited art fails to anticipate, teach, or suggest “recording an order of the second change relative to the first change.” The Office Action again cites the above-summarized portions of Mandal as teaching this feature of claim 1. Office Action, p. 4. However, as is clear from the summaries provided above, none of these sections of the reference teach or suggest tracking the relative order of two changes made to a primary volume. Furthermore, none of these sections of the reference teach or suggest tracking the order of a change caused by a restore operation relative to another change. Accordingly, claim 1 is further patentable over the cited art for this reason.

Claims 2-3 and 6-10 are patentable over the cited art for at least the foregoing reasons by virtue of their dependence upon claim 1. Claims 11-15, 17-19, and 21-24 are patentable over the cited art for similar reasons.

CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned at 512-439-5087.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on June 30, 2006.

Brenna A. Brock 6/30/2006
Attorney for Applicant(s) Date of Signature

Respectfully submitted,

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